REMARKS

Upon entry of this response, claims 1-30, and 32-45 will be pending in the present application, with claims 1, 26, 29, 32 and 40 being independent. Claims 1-32 have been rejected. Claims 1, 3-11, 15-16, 18, 21, 25-26, and 28-32 were rejected under 35 U.S.C. 102(e) as being anticipated by *Kalra et al.* (5,953,506). Claims 2, 12-14, 17, 19-20, 22-24, and 27 were rejected under 35 U.S.C 103(a) as being unpatentable over *Kalra*. Generally, Applicant submits that all of the above rejections are improper. Reconsideration and reexamination is requested in view of the following remarks.

A- Claim Rejections Under 35 U.S.C. 102

1. Independent claims 1 and 26

Independent claims 1 and 26 have been rejected under 35 U.S.C. 102(e) as being anticipated by *Kalra*. Independent claims 1 and 26 include the limitation "foregoing decoding of portions of received video input." In rejecting claims 1 and 26, the Examiner cites column 17, lines 25-67 and column 18, lines 1-24 of *Kalra*. The cited material in columns 17 and 18 of *Kalra* deals with determining which streams should be transmitted from a server to a client computer, but does not teach, suggest, imply or disclose a system or method that includes "forgoing decoding of portions of received video input." The context for the cited material in columns 17 and 18 of *Kalra* is established in column 16 and then reinforced in columns 17 and 18:

> "Overall operation of the adaptive stream server will now be described with respect to FIG. 15A. Once the adaptive stream server receives a profile from the user, in step 550, it uses that information, as well as other information described hereinafter, to make a determination of which streams to transmit in a step 552. Once this determination is made, streams are actually transmitted in a step 554, as long as the profile is not updated, as will be explained further hereinafter, or there is no indication that there is an end of session, as depicted in FIG. 15A by step 556, transmission will continue. If an end of session is depicted, the end of the session will occur as indicated by step 568. With respect to step 552 and the determination of which streams to transmit, attention is

directed to the flowchart in FIG. 15B1 which indicates the steps that the server takes to determine which of the particular streams to transmit. First, in step 552A, a network bandwidth constraint is applied to determine which bandwidth is available for this particular session. Thereafter, the CPU constraint is also applied as received from the profile from the client computer in order to determine if that constraints which adaptive streams can be transmitted. Thereafter, in step 552C, the video preference is used to further limit which adaptive streams to send and thus make a determination of which adaptive stream to transmit." (column 16, lines 37-61; emphasis supplied)

"Each of these constraints can be dynamically updated on a periodic basis, how the profile is used to select the appropriate stream combination, are now further described with respect to the following three steps and FIGS. 15B2A through 15B2D:" (Column 17, lines 4-8; emphasis supplied).

"Once step 552 in FIG. 15A is completed and the stream combination is set, the transmitting of streams by the server, and the reception of the same by the client computer then takes place." (Column 17, lines 61-64; emphasis supplied).

"The drop frame codes and next picture pointer need not be transmitted, as these codes are used by the stream server to quickly determine whether to drop a frame and then determine quickly the location of the next frame, so that a real-time, appropriate, and dynamically changing picture sequence, dependent upon the profile, can be transmitted. This transmission occurs for each picture in a group, and, then each group of pictures, until transmission of the entire sequence takes place. Although it should be apparent, it is noted that the streams that need to be transmitted from the server can be quickly determined by the server processor, since the server processor can use the next picture pointer and drop frame codes embedded in the data structure to quickly determine which frames to send, as well as which frames not to send, depending on the particular profile." (Column 18, lines 10-24; emphasis supplied).

The Examiner also refers to FIG. 9C of *Kalra* in rejecting claims 1 and 26. According to *Kalra*, "FIG. 9C illustrates steps required to generate the frame drop code and the next picture pointer, which can be inserted into memory allocated for these codes. It should be noted that the frame drop code maintains information that determines whether to drop that particular frame for

each adaptive stream for a variety of different frame rates." (Column 10, lines 58-64; emphasis supplied).

The reason for dropping frames using the steps in FIG. 9C is also discussed: "As noted, while information relating to each of the additive streams is stored on the server for each of the different frequency band ... frames must still be dropped if the actual frame rate is less than the maximum frame rate of that band. Thus, for instance, at a frame rate of 20 frames per second, the adaptive streams that had been generated by spatial scaling transcoder 124A will be used, but certain of those frames that were generated at 30 frames per second must be dropped so that a frame rate of 20 frames per second is obtained." (Column 10, lines 46-58; emphasis supplied).

It should be apparent from the above language that *Kalra* deals with the transmission of a customized video stream to a client device, but does not teach, suggest, imply or disclose a system or method that includes "foregoing decoding of portions of received video input." Therefore, Applicant respectfully submits that independent claims 1 and 26 are not anticipated by Kalra.

2. Independent Claim 29

Independent claim 29 has been rejected under 35 U.S.C. 102(e) as being anticipated by *Kalra*. Independent claim 29, as amended, is directed to "A video decoding method comprising the steps of: determining that a video decoding rate of received video input should be reduced while maintaining synchronization with an unmodified audio decoding rate; and reducing the video decoding rate accordingly."

In rejecting independent claim 29, the Examiner cites column 17, lines 25-55 of *Kalra*. This cited material teaches how to create a "set of adaptive streams that satisfy the CPU constraint" (Column 17, lines 51-52). These adaptive streams are subsequently transmitted to a client device: "Once step 552 in FIG. 15A is completed and the stream combination is set, the transmitting of streams by the server, and the reception of the same by the client computer then takes place." (Column 17, lines 61-64).

It should be apparent from the above language that *Kalra* deals with the transmission of a customized video stream to a client device, but does not teach, suggest, imply or disclose a

method that includes reducing the video decoding rate of received video input. Therefore, Applicant respectfully submits that independent claim 29 is not anticipated by *Kalra.*

3. Dependent Claims 3-11, 15-16, 18, 21, 25, 28, and 30

Dependent claims 3-11, 15-16, 18, 21, 25, 28, and 30 have been rejected under 35 U.S.C. 102(e) as being anticipated by Kalra. Dependent claims 3-11, 15-16, 18, 21, and 25 each include one or more elements or limitations in addition to those of independent claim 1; dependent claim 28 includes another limitation in addition to the limitations of independent claim 26; and dependent claim 30 includes another limitation in addition to those of independent claim 29. Therefore, since independent claims 1, 26, and 29 have been shown to be not anticipated by Kalra, it is respectfully submitted that dependent claims 3-11, 15-16, 18, 21, 25, 28, and 30 are also not anticipated by Kalra. Furthermore, Kalra does not teach, suggest, imply or disclose the additional elements and limitations contained in dependent claims 3-11, 15-16, 18, 21, 25, 28, and 30.

Regarding claims 15-16, 21, and 25-26, the Examiner alleges that Kalra "discloses a method/a video decoding system for adapting to resource constraints, comprising the steps of determination logic configured to determine whether a resource constrained mode is to be initiated (col. 17, lines 25-55); and initiation logic configured to initiate the resource constrained mode responsive to the determination logic, including foregoing decoding of portions of received video input (Fig. 9C; col. 17, lines 56-67; col. 18, lines 1-24)." Applicant hereby re-asserts the arguments made above with respect to the differences between Kalra and independent claims 1 and 26.

Regarding claims 3, 18, and 28, the Examiner alleges that Kalra "discloses inadequate bandwidth availability (col. 17, lines 10-24)." The bandwidth availability disclosed in Kalra is network bandwidth availability. In contrast, claims 3, 18, and 28 deal with "bus bandwidth availability."

Regarding claims 4 and 5, the Examiner alleges that Kalra "discloses user interaction (col. 2, lines 18-23)." The user interaction disclosed in Kalra is used to increase the quality of one media form at the expense of another media form. In contrast, the user interaction referenced in claim 4 is used to determine "that the resource constrained mode is to be initiated," and the

user interaction referenced in claim 5 is used to determine "a plurality of resource constraint modes."

Regarding claim 7, the Examiner alleges that Kalra "discloses user interaction causing graphics to be generated and output along with the video output (Fig. 2B)." The text corresponding to Fig. 2B states: "FIG. 2B illustrates a specific example of various types of adaptive digital streams that a stream management module 20 can operate upon. In this example, animation 3-D and video streams provide visual elements that the stream management module can select that can then be displayed for visual sensory perception by a multimedia device. Similarly, textual adaptive digital streams can also be received by the stream management module 20 so that text can also appear and be visually perceived based upon the language that the user desires to obtain. Furthermore, audio is also transmitted by the stream management module based upon profile characteristics selected by the user, such as whether mono or stereo sound that is oversampled or not is desired." Therefore, Kalra does not disclose causing graphics to be generated and output along with video output.

Regarding claim 8, the Examiner alleges that Kalra "discloses receiving from a video transmitter data describing the received video input." The Examiner does not refer to a specific portion of Kalra that allegedly discloses the elements or limitations of claim 8. Applicant respectfully maintains that Kalra does not disclose the following limitation of claim 8: "wherein the determining step includes determining that the resource constrained mode should be initiated responsive to receiving from a video transmitter data describing the received video input."

Regarding claims 10 and 11, the Examiner alleges that Kalra "discloses decoding B and P frames (Fig. 4)." Although Kalra discloses B and P frames, Kalra does not disclose foregoing decoding B and/or P frames.

Regarding claims 29 and 30, the Examiner alleges that Kalra "discloses a decoding method comprising the steps of: determining that a video decoding rate should be reduced while maintaining synchronization with an unmodified audio decoding rate and reducing the video decoding rate accordingly (col. 17, lines 25-55)." The referenced portion of Kalra discloses creating a set of adaptive streams, but does not disclose "determining that a video decoding rate should be reduced while maintaining synchronization with an unmodified audio decoding rate and reducing the video decoding rate accordingly."

B- Claim Rejections Under 35 U.S.C. 103

Claims 2, 12-14, 17, 19-20, 22-24, and 27 were rejected under 35 U.S.C. 103(a) as being unpatentable over Kalra. Dependent claims 2, 12-14, 17, 19-20, and 22-24 each include one or more elements or limitations in addition to those of independent claim 1, and dependent claim 27 includes another limitation in addition to the limitations of independent claim 26. Therefore, since independent claims 1 and 26 have been shown to be not anticipated by Kalra, it is respectfully submitted that dependent claims 2, 12-14, 17, 19-20, 22-24, and 27 are not unpatentable over Kalra. Furthermore, Kalra does not teach, suggest, imply or disclose the additional elements and limitations contained in dependent claims 2, 12-14, 17, 19-20, 22-24, and 27.

Regarding claims 2, 17, and 27, the Examiner alleges that even though Kalra does not particularly determine the resource constraint being initiated responsive to inadequate memory availability, it is well known in the art to compensate for a limited memory resource. Furthermore regarding claims 19-20, the Examiner alleges that utilizing a look-up-table (col. 11, lines 1-17) and a record keeping of a history of resource need are well known the art. MPEP Section § 2144.03, entitled "Reliance on Common Knowledge in the Art or 'Well Known' Prior art," states that when an Applicant traverses such a finding, the Examiner is required to either cite a reference or prepare an affidavit in support of his or her position. Accordingly, Applicant respectfully traverses all of the findings of well known prior art contained in the above-referenced Office Action and requests that the Examiner provide evidence in support of such findings.

Regarding claim 12, the Examiner alleges that Kalra discloses foregoing decoding of a plurality of frames (Fig. 9C; col. 17, lines 56-67; col. 18, lines 1-24), and repeating presentations of decoded frames (col. 12, lines 1-11), and that, as a result, it is considered obvious to repeat presentations of decoded frames in place of the plurality of frames that are not decoded. Applicant maintains that Kalra discloses a method for constructing adaptive streams for transmission to a client device but does not disclose foregoing decoding a plurality of frames nor repeating presentations of decoded frames. Furthermore, claim 12 includes the limitation

"wherein the initiating step includes foregoing decoding a plurality of frames." Such limitation is not disclosed or suggested by Kalra.

Regarding claims 13-14, the Examiner alleges that Kalra discloses decoding I and P frames (Fig. 4). Fig. 4 illustrates properties of conventional digital audio/video formats but does not disclose decoding I and P frames. Furthermore, claim 13 includes the limitation "wherein the decoded frames that are repeated to a user include intra-coded frames (I frames)" and claim 14 includes the limitation "wherein the decoded frames that are repeated to a user include predictive frames (P frames)." Kalra, however, does not disclose repeating decoded frames to a user.

Regarding claim 22, the Examiner alleges that it is considered nothing more than a simple design choice to maintain existing resource priorities controlling devices using the resources. Regarding claim 23, the Examiner alleges that it is considered nothing more than a simple design preference to utilize a digital home terminal including an interrupt driven CPU that is notified when a resource becomes constrained. Regarding claim 24, the Examiner alleges that it is considered nothing more than a simple design choice to present an audio to a user at a regular rate and maintaining audio and video synchronization during the resource constrained mode. Although the Office Action alleges that the limitations of claims 22-24 are nothing more than simple design choices, Applicant maintains that such a rejection is inappropriate since the claimed limitations clearly relate to functional distinctions and not solely to ornamentation. In re Seid, 73 U.S.P.Q 431 (C.C.P.A. 1947). Applicant further requests the Examiner to produce prior art evidencing the alleged obviousness of the claimed limitations.

CONCLUSION

Upon entry of this response, claims 1-30, and 32-45 will be pending in the present application, with claims 1, 26, 29, 32 and 40 being independent. Reconsideration is respectfully requested in view of the foregoing remarks. Based on the remarks set forth herein, Applicant respectfully submits that the subject patent application is in condition for allowance. Because the claims may include additional elements that are not taught or suggested by the cited art, the preceding arguments in favor of patentability are advanced without prejudice to other bases of patentability.

Should the Examiner have any comments or suggestions that would place the subject patent application in better condition for allowance, he is respectfully requested to telephone the undersigned attorney at (770) 933-9500.

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ANNOTATED VERSION OF MODIFIED CLAIMS TO SHOW CHANGES MADE

5. (Once Amended) The method of claim [8] 4, wherein the resource constrained mode is one of a plurality of resource constrained modes determined by the user interaction.

6. (Once Amended) The method of claim [8] 4, wherein the user interaction includes causing the video decoding system to reduce spatial resolution of video output.

7. (Once Amended) The method of claim [8] 4, wherein the user interaction includes causing graphics to be generated and output along with the video output.

29. (Once Amended) A video decoding method comprising the steps of:

determining that a video decoding rate of received video input should be reduced while maintaining synchronization with an unmodified audio decoding rate; and

reducing the video decoding rate accordingly.

32. (Once Amended) [The method of claim 31,] A video decoding method comprising the steps of:

determining whether a picture repetition mode should be initiated;

initiating a mode of repeating pictures responsive to determining that the picture repetition mode should be initiated; and

wherein the determining step is responsive to a step of determining that at least one resource is constrained.

33. (New) The method of claim 1, wherein the received video input has a first picture rate, and wherein an output video stream has a second picture rate that is higher than the first picture rate.

34. (New) The method of claim 33, wherein a decoded picture is presented a plurality of times in place of a picture that is not decoded.

35. (New) The method of claim 33, wherein a decoded picture is presented five times if a subsequent picture is not decoded.

36. (New) The method of claim 35, wherein the first picture rate is 24 Hertz and the second picture rate is 60 Hertz.

37. (New) The method of claim 1, further comprising:

retrieving a first set of video data from a memory component, wherein the first set of video data corresponds to a first video picture;

scaling the first set of video data into a second set of video data corresponding to a second video picture that is smaller than the first video picture;

transmitting the second set of video data to a display device, wherein the second set of video data is not stored in the memory component prior to being transmitted;

transmitting graphics data to the display device, wherein the graphics data is displayed contemporaneously with the second set of video data.

38. (New) The method of claim 37, wherein the memory component stores compressed video data and decompressed video data.

39. (New) The method of claim 38, wherein the memory component is coupled to a video decoder.

40. (New) A method in a video decoding system for adapting to resource constraints, said method comprising steps of:

determining whether a resource constrained mode is to be initiated;

responsive to determining that the resource constrained mode is to be initiated, initiating the resource constrained mode, including foregoing decoding of portions of received video input;

wherein the received video input has a first picture rate;

wherein an output video stream has a second picture rate that is higher than the first picture rate; and

wherein a decoded picture is presented a plurality of times in place of a picture that is not decoded.

41. (New) The method of claim 40, wherein a decoded picture is presented five times if a subsequent picture is not decoded.

42. (New) The method of claim 41, wherein the first picture rate is 24 Hertz and the second picture rate is 60 Hertz.

43. (New) The method of claim 1, further comprising:

providing an interlaced video picture output having a first set of display fields that is interlaced with a second set of display fields.

44. (New) The method of claim 43, wherein the content of the second set of display fields is derived from the content of the first set of display fields in order to avoid jitter artifacts.

45. (New) The method of claim 44, wherein the content of the second set of display fields is copied from the content of the first set of display fields.